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EXAMINER

FISCHMANN, BRYAN R

ART UNIT	PAPER NUMBER
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3618

DATE MAILED: 09/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,567

Applicant(s)

HAHN, WOLFGANG

Examiner

Bryan Fischmann

Art Unit

3618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 22 July 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Acknowledgments

1. The Amendment (paper 8) filed 7-22-2003 has been entered.

Specification

2. The disclosure is objected to because of the following:

A) The first sentence of the specification does not indicate whether the international application which benefit is being claimed was published under PCT article 21(2) in English. See 37 CFR 1.78(a)(2) and Section 202.01 of the MPEP.

B) Paragraph 0009 and other places in the specification recite "focal distance". This term is not considered to be adequately defined. See the 112 1st portion of this Office Action for further discussion.

C) The recitation of "differential contrast evaluation" in paragraph 0020 of paper 5 is objected to as being unclear and inadequately explained.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the structure which allows each camera to be adjusted to a different focal distance as recited in claim 10 and some claims depending upon claim 10 must be shown or the features canceled from the claims. No new matter should be entered.

See the 112 1st portion of this Office Action for further discussion of this area.

Art Unit: 3618

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 19 and 21-23 are objected to because of the following:

B) Claim 19 recites "...said analyzing device includes means for performing differential contrast evaluation".

As already noted in this Office Action, the term "differential contrast evaluation" does not appear to have been adequately defined in order to be claimed. In other words, the Applicant simply recites this term with no explanation as to what kind of data processing is associated with this term.

Note that this objection will be withdrawn if Applicant can supply evidence that the above term is known to one of ordinary skill in the art at the time the invention was made. Note, however, that evidence provided that differential contrast evaluation is known to one of ordinary skill in the art at the time the invention was made may be used as prior art against the claims.

See claims 21 and 23 for an identical recitation.

Note that claim 22 is dependant upon claim 19.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 10-31 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

A) Claim 10 recites "... each camera...is adjusted to a different focal distance...".

Adequate written description for the above recitation is considered lacking due to the following:

1) First, the following terms are standard in photography:

field – the area in front of the camera being photographed

field depth – the distance from the camera to the furthest object
being photographed

focal length – the distance from the camera lens to the focal point –
the focal length affects the magnification of the object being photographed

focal point – a point on a plane at which light passing through a
camera lens projects a focused image – the focal point is on a plane containing the
medium, such as film or a CCD (charge coupled device) onto which the image being
photographed is stored.

Art Unit: 3618

Note that the term "focal distance" has not been explicitly defined, nor has this term been found by the Examiner relating to cameras or photography, so, for purposes of examination, the term "focal distance" is best understood to correspond to the term "focal length".

As best understood by the Examiner, the above recitation is stating that the focal length of the camera is adjusted, or changed so that the focal length of each camera is different from what it previously was. Since conventional cameras generally do not allow the lens or recording medium to be moved relative to each other, and Applicant has offered no disclosure of how the lens and the recording medium would be moved relative to each other, it is considered that inadequate written description has been provided to show that the Applicant was in possession of this aspect of his invention at the time the invention was made.

Note that Section 608.01 (o) and 2173.05(a) of the MPEP requires that nomenclature used in the claims be apparent from the specification, unless it is apparent from the prior art.

Note that Section 608.01(g) of the MPEP also recites "The description is a dictionary for the claims and should provide clear antecedent basis for all terms used in the claims".

Note that the term "focal distance" is also used in some claims depending upon claim 10.

B) Claim 16 recites "the focal distance of the CCD camera...is adjusted to substantially correspond with a headlight cone range...".

Art Unit: 3618

Again, the term "focal distance" is best understood to correspond to the commonly used photography term "focal length", which as stated above is the length between a camera lens and the recording medium used to record a focused image.

As noted above, there is no teaching by Applicant of how the lens would be moved relative to the recording medium, or vice versa, in order to accomplish this. Due to this, there is adequate written description for the above recitation.

See also similar recitations in claims 16, 28 and 29.

Also note that in photography, the focal length is generally not related to the distance to the "field depth", or, in other words, the distance to the object being photographed, as the above recitation implies. Rather the focal length affects the magnification of the image. In photography, "field depth" is generally "compensated for" by the size of an aperture in front of the camera lens, which affects the amount of light passing through the lens in order to achieve the best image. This aperture size is generally referred to by "f numbers" that generally range from f2 to f16. The "f number" is a ratio of the focal length of the camera to the aperture size.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 10-31 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant regards as his invention.

A) The term "focal distance" recited in claim 10 as well as some claims depending from claim 10 is considered unclear, as this term does not appear to have

Art Unit: 3618

been defined in the specification and is not believed to be commonly used in the field of photography.

As previously noted, for purposes of examination, the term "focal distance", will be equated with the common photographic term "focal length".

Note that Section 608.01 (o) and 2173.05(a) of the MPEP requires that nomenclature used in the claims be apparent from the specification, unless it is apparent from the prior art.

Note that Section 608.01(g) of the MPEP also recites "The description is a dictionary for the claims and should provide clear antecedent basis for all terms used in the claims".

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 10-18, 20 and 24-30, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 10-255019, in view of Kodak Reference Handbook, pages 8 and 9.

Japanese Patent 10-255019 teaches a motor vehicle sensor system for detecting an outer environment, the sensor system comprising:

at least two camera systems (CCD and infrared - see English Language Abstract) operable to image the outer environment (Figure 5); and

Art Unit: 3618

wherein each camera system operates in a different spectral region (infrared and non-infrared).

Japanese Patent 10-255019 fails to teach that each camera is adjusted to a different focal distance. As previously noted in this Office Action, the term "focal distance" is best understood to correspond to the term "focal length" commonly used in photography.

However, Kodak Reference Handbook, page 9 teaches that "infrared light rays, due to their longer wave length, focus in a different plane from visible light rays...better infrared pictures are obtained if the lens is extended about $\frac{1}{4}\%$ of its focal length after it has been focused for visible light". Since infrared light and visible light focus in different planes, it then follows that the focal length, or distance would not be the same for an infrared camera and a CCD camera recording visible light, as the focal length, or distance, is the distance to a plane on which the image is focused. Due to this, the Kodak Reference Handbook, page 9, recommends that the focal length of cameras photographing visible and infrared light be different, or, in other words, adjusted to different focal lengths, or distances.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize different focal distances for the CCD camera and infrared camera of Japanese Patent 10-255019, as taught by Kodak Reference Handbook, page 9.

Regarding claims 13 and 27, note that it is considered within the skill level of one of ordinary skill in the art to duplicate parts. See Section 2144.04 of the MPEP.

Art Unit: 3618

Duplicating, or adding an additional CCD camera is advantageous in that a second camera may be placed at a different location to expand the "field of vision" beyond that of the first CCD camera. A second CCD camera is also advantageous in that it may be used as a "backup" in the event of a casualty to the first CCD camera.

Regarding claims 14 and 15, note that the CCD camera of Japanese Patent 10-255019 is used to detect a visible image in front of a vehicle. A "visible image in front of a vehicle" may be considered to be within a "close range", particularly when compared with more distance objects such as the sky, the moon, the horizon and distant mountain ranges.

Regarding claims 16, 17, 28 and 29, note that Japanese Patent 10-255019 teaches that the CCD camera detects visible images and that the infrared camera detects high luminance parts such as tail lights. This suggests that the camera system is to be used at night, since a vehicle does not use tail lights during the day. Note that at night, the only visible light is the light that is reflected from the vehicle's headlights. See also the 112 1st portion of this Office Action.

Regarding claims 18, 20 and 30, see reference numbers 14, 16 and 18 of Figure 1 of Japanese Patent 10-255019 and the English Language Abstract.

Regarding the recitation of "vehicle body" in claim 24, note the recitation of "self vehicle" in the English Language Abstract of Japanese Patent 10-255019. Regarding the recitation of "at least two camera systems arranged in a forward portion of the vehicle body for imaging areas in a traveling direction of the motor vehicle", see Figures 3 and 5 of Japanese Patent 10-255019 and the recitation of "CCD camera acquires a

Art Unit: 3618

visible image in front of a vehicle and the image is binarized by an image capture board...an infrared image that is acquired by an infrared camera...is supplied to the board...A threshold for binarization of the infrared image is decided on the temperature information of parts..."in the English Language Abstract of Japanese Patent 10-255019. From this, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the infrared camera was viewing objects in front of the vehicle, as is the CCD camera, since both the CCD and infrared images are sent to the same board in order to recognize vehicles at night.

11. Claims 19 and 21-23, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 10-255019 in view of Kodak Reference Handbook, pages 8 and 9, as applied to claim 18 and 20, and further in view of European Patent 454516.

The combination motor vehicle of Japanese Patent 10-255019 fails to teach the use of differential contrast evaluation.

However, European Patent 454516 teaches a motor vehicle sensing system including the use of two cameras including one in the visible range and the other in the infrared range and the use of differential contrast evaluation to evaluate objects in the visual range (see paragraph 0005 of paper 5). Differential contrast evaluation is advantageous in that the use of differential contrast evaluation facilitates the processing of the light signals by an analyzer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize differential contrast evaluation in the combination

Art Unit: 3618

motor vehicle sensing system of Japanese Patent 10-255019, as taught by European Patent 454516.

Regarding claim 22, see reference numbers 14, 16 and 18 of Japanese Patent 10-255019 and the English Language Abstract.

12. Claim 31, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 10-255019 in view of Kodak Reference Handbook, pages 8 and 9, as applied to claim 24, and further in view of Japanese Patent 4-164281.

The combination motor vehicle of Japanese Patent 10-255019 fails to teach a display to provide environmental information to a driver.

However, Japanese Patent 4-164281 teaches a motor vehicle sensing system including the use of a CCD camera to provide an image on a screen (see reference number 2a and the English Language Abstract). A display providing environmental information to a driver is advantageous in that the driver may see objects in front of him on the display that are not visible to him, especially at night or in bad weather.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a display in the combination motor vehicle sensing system of Japanese Patent 10-255019, as taught by Japanese Patent 4-164281.

Regarding the claim 31 recitation "...display...arranged within a driver's viewing range...", it is noted that Japanese Patent 4-164281 does not explicitly state that the display is within the driver's viewing range. However, it would have been obvious to

Art Unit: 3618

one of ordinary skill in the art to locate the display within the driver's range, as otherwise, the display would be of no use to the driver.

Response to Applicant's Remarks (paper 8) and Examiner's Comments

13. The amendment (paper 8), including Applicant's comments, resolved all specification objections made on the first Office Action (paper 7). The objections to new matter in the Substitute Specification (paper 5) have been withdrawn, as upon further review, the Examiner noted that the Substitute Specification was filed on the same day (03-08-2002) as the Instant Application was filed. The Examiner agrees with the Applicants comment in paper 8 that the foreign priority document is not required to be listed in the first paragraph of the specification.

14. Regarding the claim objection to the use of the term "differential contrast evaluation" in the last Office Action, and repeated in this Office Action, the Examiner noted the Applicant's comments regarding this term being understood by those skilled in the art and offered EP reference described in paragraph 0005 of paper 5 as an example. However, this EP reference, while seemingly describing something that could be inferred as "differential contrast evaluation", does not appear to explicitly use this term. Due to this, the Examiner would like to see a more explicit teaching that this term is known in the art before withdrawing the objection to it's use.

Also, since it is Applicant's position that "differential contrast evaluation" is known in the art, the Examiner has rejected all claims in this Office Action reciting this term, as

Art Unit: 3618

what is characterized as being old and well known in the art cannot be a point of novelty of the Instant Invention.

15. The amendment (paper 8) has overcome the drawing objection made in the last Office Action. However, an additional drawing objection was noted, as set forth in this Office Action.

16. In light of the Applicant's comments traversing the 103 rejection of independent claims, the Examiner in light of Applicant's comments traversing this rejection, and upon further review, has withdrawn all 103 rejections made on the last Office Action. The Examiner regrets any added delays or expense this has caused the Applicant.

However, it is noted that confusion over what is meant by "focal distance" in claim 10 is considered to be a contributing factor in the withdrawal of this rejection. The Examiner believes that the rejection set forth in this Office Action (paper 9) is a much stronger rejection, based upon the best understanding of the Instant Invention. Accordingly, this action is made non-final. Further clarification of what precisely is meant by "focal distance" by Applicant, without adding new matter, would likely facilitate prosecution of the Instant Invention.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Bryan Fischmann whose telephone number is (703) 306-5955. The examiner can normally be reached on Monday through Friday from 7:30 to 4:00.

Art Unit: 3618

If attempts to reach the Examiner by telephone are unsuccessful, the examiner's supervisor, Brian Johnson, can be reached on (703) 308-0885. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

Bryan Fischmann 8-29-3
BRYAN FISCHMANN
PATENT EXAMINER